

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Invertebrate Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Limenitis archippus obsoleta*
COMMON NAME: Obsolete Viceroy Butterfly, Viceroy, Hulst's Admiral
SYNONYMS: *Basilarchia archippus obsoleta*, Western Viceroy
FAMILY: Nymphalidae

AUTHOR, PLACE OF PUBLICATION: Edwards, W.H. Papilio, 2:22 (1882).

TYPE LOCALITY: "southern Arizona".

TYPE SPECIMEN: Types lost, F.M. Brown, Trans. American Ent. Soc., 93: 365-366; 1967.

TAXONOMIC UNIQUENESS: There are four members of the genus *Limenitis* in North America. Three of these species are found in southeastern Arizona on Coronado National Forest land. All three species had been historically placed in the genus *Basilarchia* at one time or another but most authors leave them in *Limenitis*, an old world genus. The species *Limenitis archippus* has six named subspecies in the U.S. with the subspecies *obsoleta* the only one known to occur in Arizona. (Brock and Prchal 2001).

DESCRIPTION: Wingspan 58-76 mm (2.26-2.96 in). The sexes are similar with females usually larger. Upperside: brownish-orange, fringes are black often enclosing a single row of large white dots and punctuated by white markings along the edge; the forewing has a median row of four white dots extending down from the top; hindwing with a black median line edged inwardly with white.

Underside: tan, lighter than upperside otherwise markings are similar.

AIDS TO IDENTIFICATION: The large size, white forewing spots above and black fringe will separate this butterfly from most other nymphalids in the region. *Danaus plexippus* (Monarch) is larger, orange above and does not have the black median line on the hindwing. *Danaus gilippus* (Queen) is strikingly similar but has more, white spotting in the apex area of the forewing and does not have the black median line on the hindwing. (Brock and Prchal 2001). Flies with, and mimics, the Queen butterfly. They can only be differentiated at rest, not in flight. When perched, Viceroy has wings open and the Queen (milkweed butterfly) keeps wings closed.

ILLUSTRATIONS: Color photo of upperside male (Bailowitz and Brock, 1991, Appendix A: plate III)
B&W photo of upper and underside male (Bailowitz and Brock, 1991: 252)
Color photo of underside male (Scott, 1986: plate 19)
Color photo of larva (Scott, 1986: plate 64)
Color photo of upperside male (Tilden and Smith, 1986: plate 9)
Color drawing of upperside male (Howe, 1975: plate 1)
Color photo of upperside male (Holland, 1931: plate VII)
Color photos (Brock and Prchal 2001)

TOTAL RANGE: Presently known from southeastern Nevada, extreme southwestern Utah, Arizona, and southward into Sonora, Mexico. Also known from most of southern New Mexico and western Texas.

RANGE WITHIN ARIZONA: Southward (from Utah) through Arizona as far west as the Colorado River then southward into Sonora Mexico (Brock and Prchal 2001). This species is widespread but local, occurring from Arivaca to the lower Santa Cruz River, to Redfield Canyon, to Duncan and south to the San Bernardino Ranch. County records include Cochise, Graham, Greenlee, Pima, Pinal and Santa Cruz. (Bailowitz and Brock 1991). Also Virgin River in Mohave County, Grand Canyon National Park, Sonoita Creek and O'Donnell Canyon sites, Cave Creek Wash and New River Wash.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Both sexes visit flowers rarely. Instead they prefer to feed at tree sap or dung. Males fly and perch among stands of the food plant to await females. Perching is usually more than 3 m off the ground. Females are less encountered but are normally found near healthy stands of the host. (Brown and Prchal 2001). Occasionally where both *L. archippus* and *L. arthemis* occur, the two may hybridize (Bailowitz and Brock 1991).

REPRODUCTION: Eggs are pale green or yellow, laid on the upperside tips of leaves of the host. Young larvae eat catkins or leaves. The mature larva looks like a bird dropping with a pair of plume-like horns near the head and numerous bumps dorsally. The color may be dark brown to yellow-green with a cream or pinkish patch on the saddle in the middle of the abdomen. The head is red-brown with small horns dorsally. The mature larvae eat the leaves. Larvae of the fall brood hibernate partially grown. They roll a leaf of the host into a tube and silk the leaf petiole to the stem. This nest is known as a hibernaculum. Feeding is then resumed with the leafing out of the host in the spring. Pupa is shiny brown with a white abdomen. There is a saddle horn like appendage on the back. (Brown and Prchal 2001).

FOOD HABITS: The larvae of this species are well documented as feeding on *Salix* (Salicaceae). This species is known to use only *Salix gooddingii* in the Coronado National Forest region (Brock and Prchal 2001). Other willows are possible.

FLIGHT PERIOD: Adults are known to fly from mid-April (19 April) to mid-November (11 Nov.) in two or three broods (Brown and Prchal 2001).

HABITAT: Found in association with stands of willow along major water courses (Tilden and Smith 1986). Desert grassland, scrub. Host is genus *Salix* (willow). According to Brock and Prchal (2001), they are found in "Riparian areas in the Coronado National Forest below 1800m with healthy, extensive stands of *Salix gooddingii*. A prime area is Patagonia Lake in Santa Cruz County."

ELEVATION: Below 5,906 feet (1800 m) (Brock and Prchal). Records from Arizona's Natural Heritage Program (=HDMS) range from 2,040 - 4,100 ft. (622 - 1250 m) (AGFD, unpublished data accessed 2001).

PLANT COMMUNITY:

POPULATION TRENDS: Unknown. Thought to be declining throughout much of its range.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[3C USDI, FWS 1989]

STATE STATUS: None

OTHER STATUS:

Forest Service Sensitive (USDA, FS Region 3 1999)

[Forest Service Sensitive, USDA, FS Region 3 1988]

MANAGEMENT FACTORS: Restore riparian habitats in its range. Conserve extant habitats. (Brock and Prchal 2001).

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Investigate reasons for possible decline. Track population levels. Restoration projects targeted at riparian habitats in its range.

LAND MANAGEMENT/OWNERSHIP: USFS - Coronado and Tonto National Forests; Private. Possibly BLM and State Land Department.

SOURCES OF FURTHER INFORMATION**LITERATURE CITATIONS:**

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Holland. 1931. The Butterfly Book. Doubleday Doran.
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Tilden, J.W. and A.C. Smith. 1986. A field guide to western butterflies. Houghton Mifflin Company, Boston, Massachusetts. p.65
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Wismann, K. 1992. Pers. comm. to D. Ide (AGFD), July 15, 1992.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

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James Brock, Sonoran Arthropod Studies Institute, Tucson, Arizona.

ADDITIONAL INFORMATION:

This butterfly is in no more danger than that of its habitat. Protecting the habitat will ensure its survival. The main threats to its habitat are lowering water tables and the spread of the exotic salt cedar. Grazing may also have an effect but only if seedling hosts are not allowed to mature. (Brock and Prchal 2001).

While this species flies from spring to fall, it appears that numbers increase as the season progresses so that one encounters more individuals in August and September. (Brock and Prchal 2001).

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